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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,950

04/13/2006

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127697

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25944 7590 12/28/2007  
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EXAMINER

TRAN, BINH Q

ART UNIT

PAPER NUMBER

3748

MAIL DATE

DELIVERY MODE

12/28/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/575,950	Applicant(s) KOHARA ET AL. <span style="float: right;">CT</span>	
	Examiner BINH Q. TRAN	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 5, 8 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

This office action is in response to the amendment filed October 10, 2007.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

*Claims 5, and 8-9 are rejected under 35 U.S.C. 102 (b) as being anticipated by Hatano et al. (Hatano) (Patent Number 5,966,930).*

Regarding claim 5, Hatano discloses an apparatus for evaluating the deterioration condition of a catalyst (e.g. 13) provided in an exhaust system of an internal combustion engine

(1), the apparatus comprising: a catalyst downstream oxygen concentration detector (15) that detects an oxygen concentration of exhaust gas downstream of the catalyst; a controller (5) that determines that an air/fuel ratio of exhaust gas downstream of the catalyst is in fuel rich condition when a detected value of the catalyst downstream oxygen concentration detector is more than a first value (Steps 41-47), determines that the air/fuel ratio of exhaust gas downstream of the catalyst is in fuel lean condition when a detected value of the catalyst downstream oxygen concentration detector is less than a second value, and controls the internal combustion engine to change an air/fuel ratio of exhaust gas upstream of the catalyst when an integrated value becomes a third value, the integrated value being integrated until a second timing after the integrated value is reset at a first timing, the second timing being determined based on a determination result of the air/fuel ratio of exhaust gas downstream of the catalyst (e.g. See Steps 41-64; col. 10, lines 51-67; col. 11-12, lines 11-67); wherein the first timing is when the determination result of the air/fuel ratio is changed, and the second timing is when the determination result of the air/fuel ratio is subsequently changed, and wherein the integrated value indicates an integrated value of an intake air volume of the internal combustion engine (e.g. **Steps 46-47**) (e.g. See Fig. 6; col. 13, lines 55-67; col. 14, lines 1-8).

Regarding claim 8, Hatano further discloses that wherein the integrated value of the intake air volume is changed for each load region of the internal combustion engine (e.g. See Steps 41-64; col. 10, lines 51-67; col. 11-12, lines 11-67).

Regarding claim 9, Hatano further discloses that wherein the integrated value is a time factor, and the third value is a predetermined time period (e.g. See Steps 41-64; col. 10, lines 51-67; col. 11-12, lines 11-67).

*Allowable Subject Matter*

Claims 10-11 are allowed.

Since allowable subject matter has been indicated, applicant is encouraged to submit *Final Formal Drawings (If Needed)* in response to this Office action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

*Response to Arguments*

Applicant's arguments filed October 10, 2007 have been fully considered but they are not completely persuasive. Claims 5, and 8-11 are pending.

Applicant's cooperation in explaining the claims subject matter more specific to overcome the claim rejection is appreciated.

Applicants' s arguments with respect to claims 5, and 8-11 have been considered but are moot in view of the new ground(s) of rejection as discussed above.

Applicants have argued that Hatano does not teach or suggest Applicants's claimed invention. More specifically, Applicants assert that the reference to Hatano fails to disclose *the first timing is when the determination result of the air/fuel ratio is changed, and the second timing is when the determination result of the air/fuel ratio is subsequently changed, and wherein the integrated value indicates an integrated value of an intake air volume of the internal combustion engine*. The examiner respectfully disagrees, and in column 13, lines 55-67; and column 14, lines

1-8; and Steps 46-47, Hatano has clearly disclosed that “*If the answer to the question of the step S41 is negative (NO), integral control is carried out. That is, it is determined at a step S45 whether or not the output SVO2 is lower than the reference voltage SVREF. If  $SVO2 < SVREF$  holds, a special I term IRSP is added to an immediately preceding value of the KO2 value at a step S46. On the other hand, if  $SVO2 \geq SVREF$  holds, a special I term ILSP is subtracted from the immediately preceding value of the KO2 value at a step S47. ... . In FIG. 6B, a time period (TL) over which the sensor output SVO2 is higher than the reference voltage SVREF is a time period during which oxygen is stored in the catalyst. Over the time period TL, the correction coefficient KO2 is controlled so as to be linearly decreased with the lapse of time, so that the excess air ratio  $\lambda$  of exhaust gases is linearly increased with the lapse of time. Therefore, the first determination parameter OSCINDEX is calculated by multiplying the determination time period TCHK by the flow rate integrated value GAIRSUM which corresponds to the integrated value of the exhaust gas flow rate, can function as a parameter proportional to the oxygen amount stored in the catalyst over the determination time period TCHK. Strictly speaking, almost half of the determination time period TCHK is a time period over which oxygen is stored in the catalyst and the remaining half of the time period is a period over which oxygen is emitted from the catalyst, which, however, does not deny the fact that the first determination parameter OSCINDEX is almost proportional to the oxygen storage capacity of the catalyst.*”. It is clearly that Hatano has show the first timing is when the determination result of the air/fuel ratio is changed, and the second timing is when the determination result of the air/fuel ratio is subsequently changed, and wherein the integrated value indicates an integrated value of an intake air volume of the internal combustion engine.

Applicant's amendment (Claims 5, and 8-11) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL See MPEP, 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

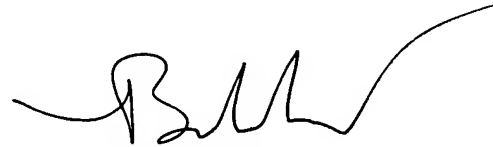
*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Binh Tran whose telephone number is (571) 272-4865. The examiner can normally be reached on Monday-Friday from 8:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (571) 272-4859. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BT  
December 21, 2007



Binh Q. Tran  
Patent Examiner  
Art Unit 3748